



# Cloud Computing Basics





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# Key Concepts/Terms

# Key Concepts/Terms

## Server



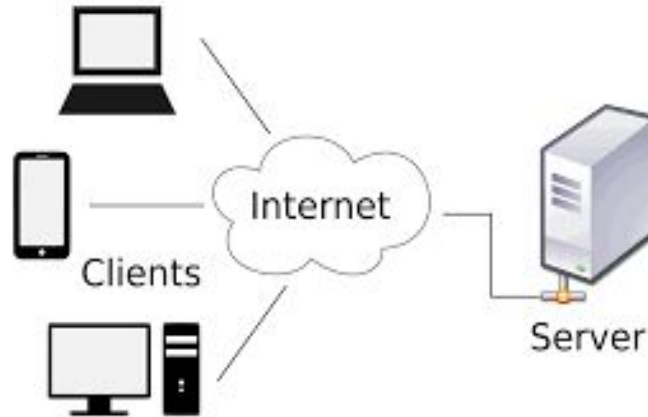
# Key Concepts/Terms

## Server vs PC



# Key Concepts/Terms

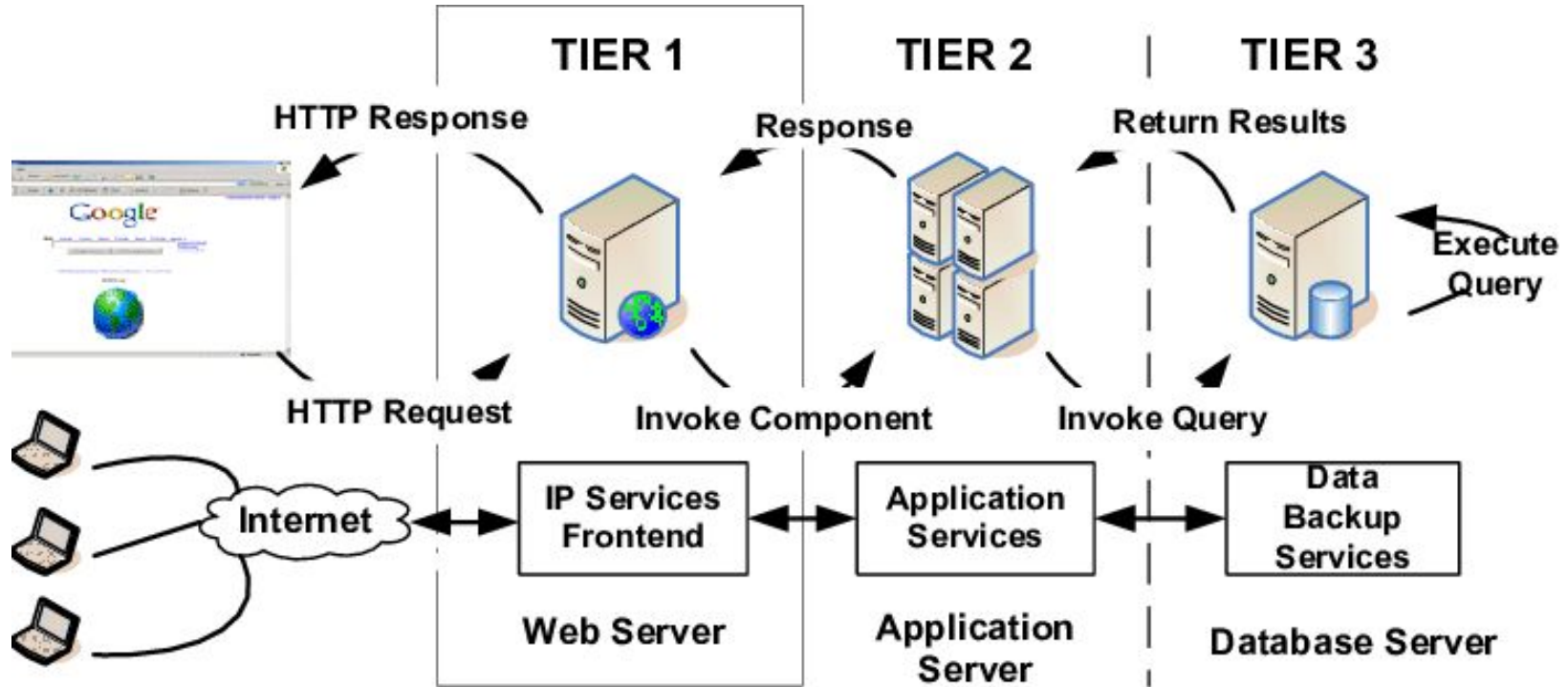
## Server and Client



- A **server** is a connection point for several clients, that will handle their requests.
- A **client** is software that (usually) connects to the server to perform actions. The client provide a **user interface** that allows users to carry out actions. It forwards these requests to the server, which carries out the action and returns a response.

# Key Concepts/Terms

## Frontend-Backend

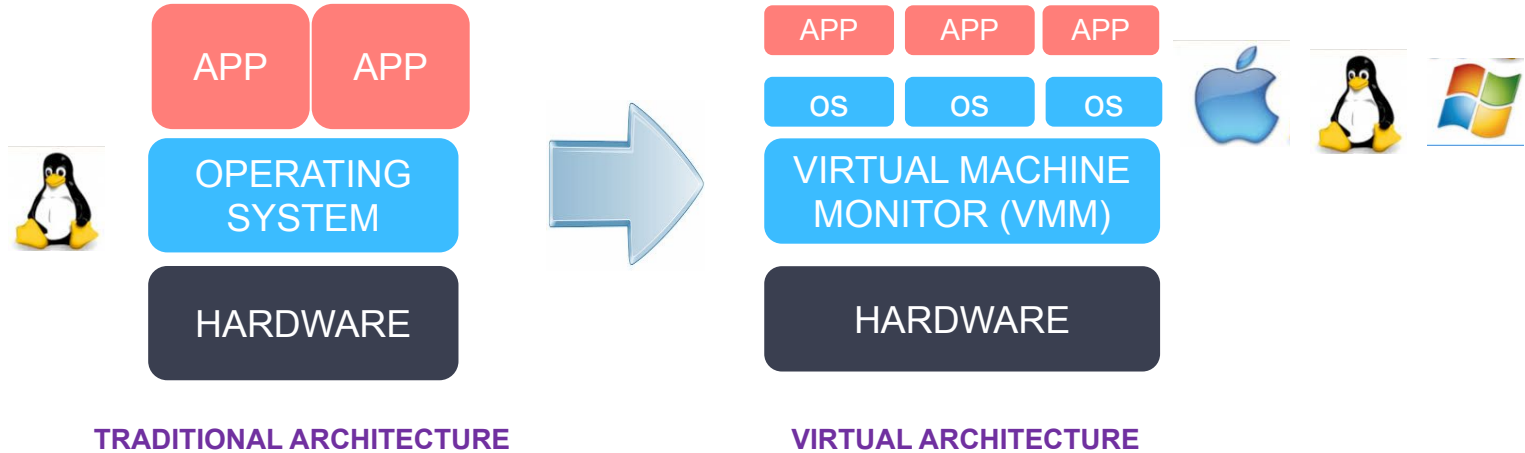


Frontend

Backend

# Key Concepts/Terms

## What is Virtualization?



- Virtualization refers to the operation of multiple operating systems called guests by sharing the same physical equipment resources.
- This will help the user to share a single physical resource instance or application with multiple users by providing multiple machines at the same time.



# Key Concepts/Terms

## Type of Virtualization?



Software Virtualization



Server Virtualization



Storage Virtualization



O/S Virtualization

# Key Concepts/Terms

## What is Container?



Container technology, also simply known as just a **container**, is a method to package an application so it can be run, with its dependencies, isolated from other processes.

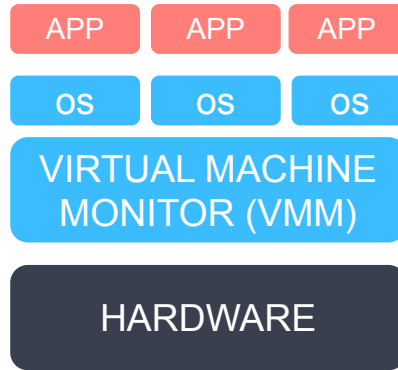
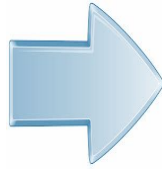
The major public cloud computing providers, including Amazon Web Services, Microsoft Azure and Google Cloud Platform have embraced container technology.

# Key Concepts/Terms

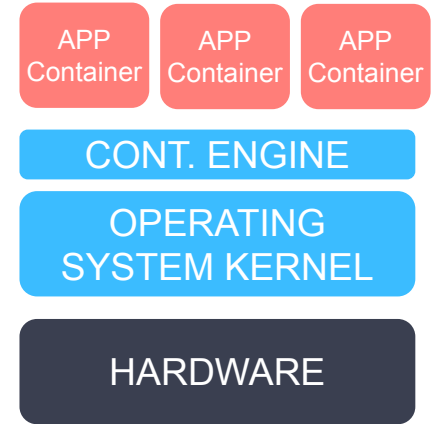
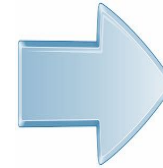
## Containerization



TRADITIONAL ARCHITECTURE



VIRTUAL ARCHITECTURE



CONTAINERIZATION ARCHITECTURE

# Key Concepts/Terms

## Serverless



- Serverless computing is a cloud computing execution model in which the cloud provider allocates machine resources on demand, taking care of the servers on behalf of their customers.

# Key Concepts/Terms

## Serverless



- "Serverless" is a misnomer in the sense that servers are still used by cloud service providers to execute code for developers. However, developers of serverless applications are not concerned with capacity planning, configuration, management, maintenance, fault tolerance, or scaling of containers, VMs, or physical servers.



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# Introduction to Cloud Computing

# Introduction to Cloud Computing



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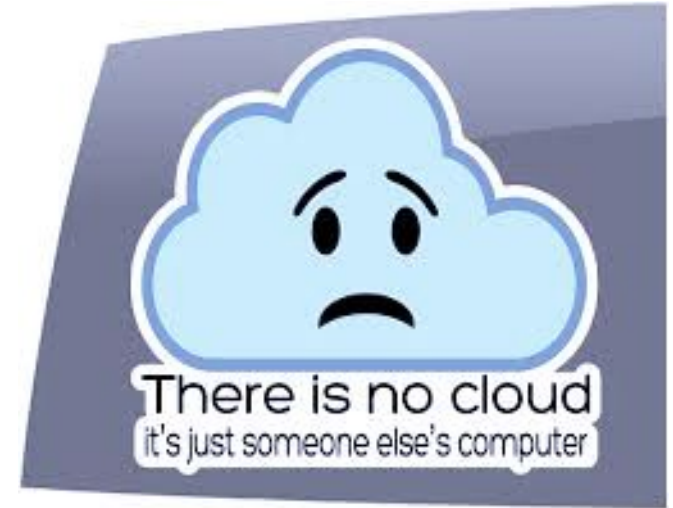


# Introduction to Cloud Computing



## What is Cloud Computing?

- The **Cloud** term refers to software and services running on the Internet, not locally on your computer.
- So you can store and access data and programs over the internet rather than the hard drive of your computer



**Cloud Computing = Application running on someone else's computer**





# Introduction to Cloud Computing

## Evolution of the Cloud Computing

- In 1950, The idea of cloud computing came into the picture,
- In 1970, The concept of virtualization has evolved with the Internet,
- In 1997, Professor Ramnath Chellappa had mentioned the Cloud in an article,
- In 2002, Amazon Web Services (AWS) launched its public cloud,
- In 2008, Google announced a preview release of App Engine,
- In 2008, Microsoft launched Azure,
- In 2009, Alibaba launched Alibaba Cloud,
- In 2011, IBM introduced the IBM SmartCloud Project,
- In 2012, Oracle launched the Oracle Cloud.



# Introduction to Cloud Computing

## Evolution of the Cloud Computing

- In 2002, Amazon Web Services (AWS) launched its public cloud,

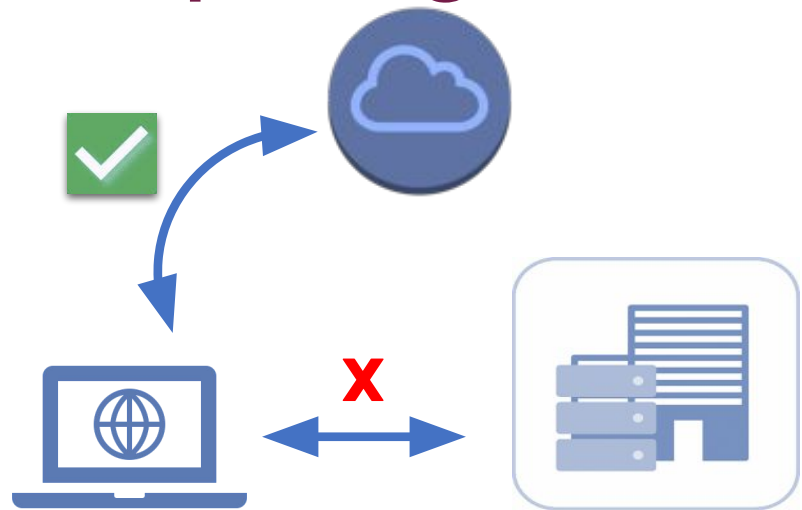




# Introduction to Cloud Computing

## How Cloud Works?

- Information and data are stored on physical or virtual servers that a cloud computing service can retain and monitor.
- Instead of computer or data center, a client uses an internet connection to access the stored information on the cloud.



# Introduction to Cloud Computing

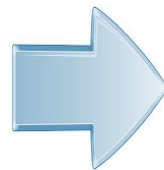
## Popular Cloud Computing App.

- Cloud usage is now spreading rapidly around the world.
- Examples of companies using cloud computing :
  - Google Drive,
  - Netflix,
  - Apple iCloud,
  - Dropbox,
  - Microsoft Office Online.

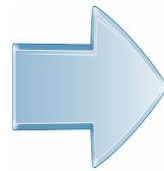


# Introduction to Cloud Computing

## Cloud Computing vs. Cloud Storage



Cloud  
Storage



Cloud  
Computing

Cloud

# Introduction to Cloud Computing

## Cloud Computing Leveraging Endustries





# Introduction to Cloud Computing

## Cloud Technology



- **Cloud Native**
- **Cloud Agnostic**



# Introduction to Cloud Computing

## Disadvantages of the Cloud Technology

- Internet Dependency
- Loss of Control
- Lack of Support







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# Why Cloud Computing?

# Why Cloud Computing?



## ANALOGY



**“If you only need milk, would you buy a cow?”**

# Introduction to Cloud Computing

## Features of the Cloud Technology



Centralization

Cost Efficiency

Elasticity &  
Flexibility

Manageability

Auto-updating

Increased Security

Reliability

Availability

Less  
~~No~~ Maintenance

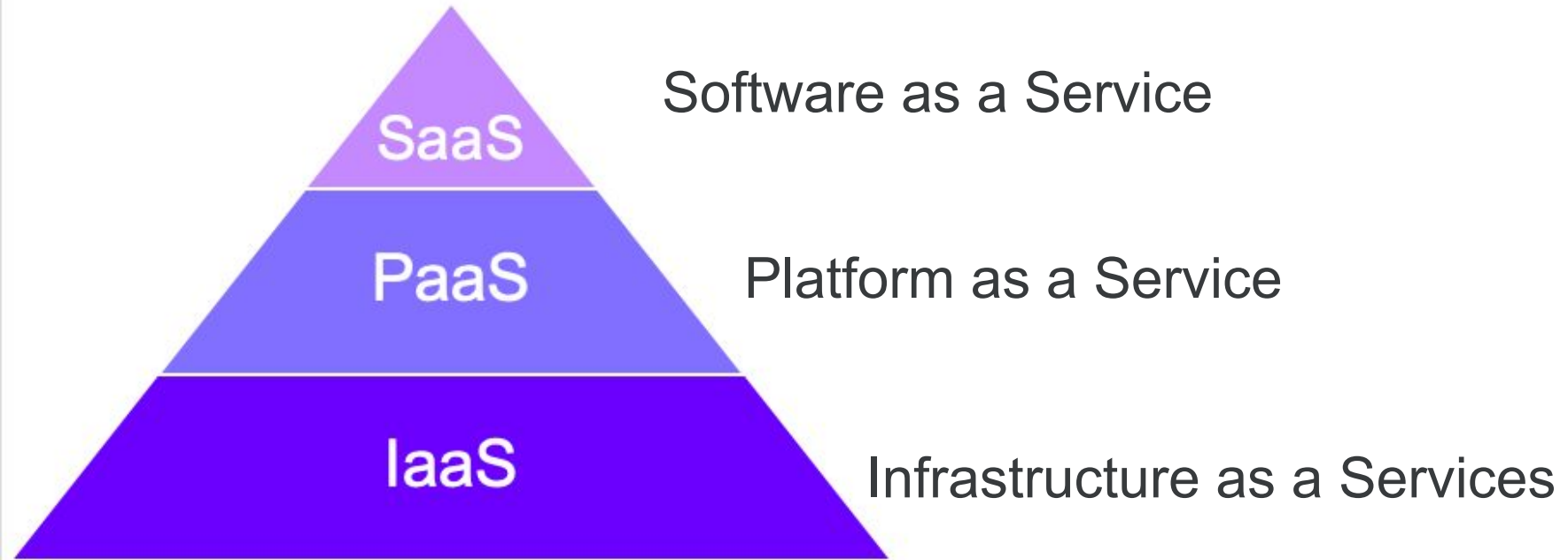


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# Service Models

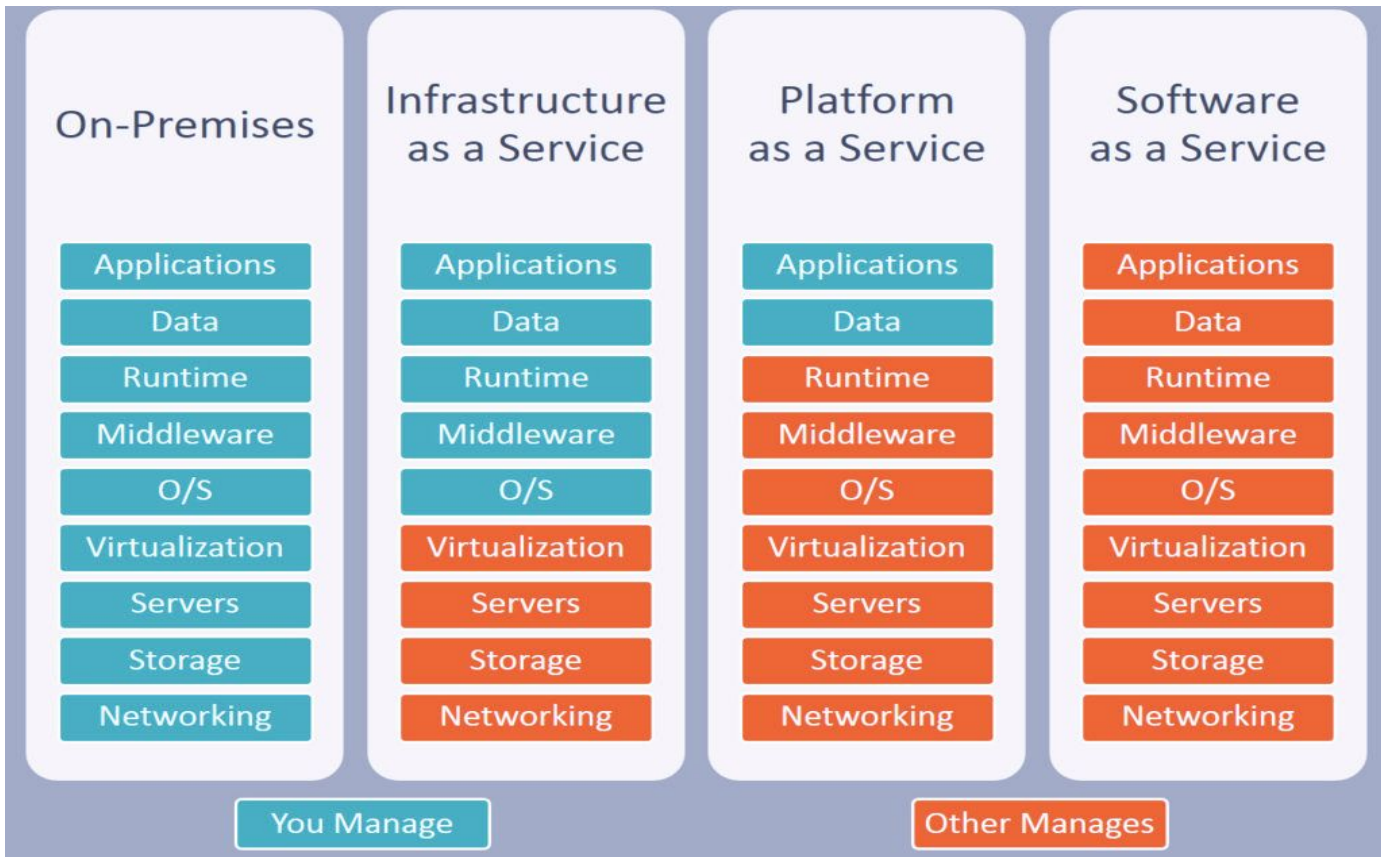
# Service Models

## Cloud Service Models



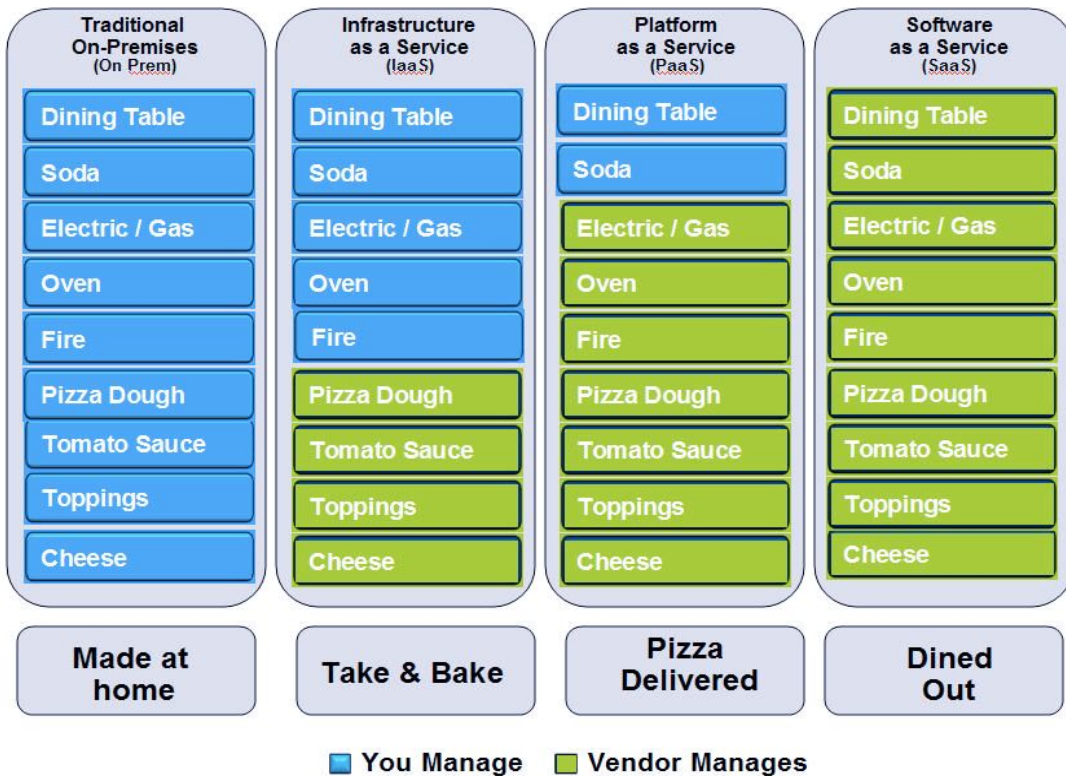
# Service Models

## Cloud Service Models



# Service Models

## Pizza Analogy for Service Model Comparison



- **On-Premise Model;** You take **all** the ingredients-Make it yourself
- **IaaS Model;** You buy **some** ingredients- Make it yourself
- **Paas Model;** Order pizza delivered
- **SaaS Model;** Go to the pizzeria.



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# Deployment Models





# Deployment Models

## Cloud Deployment Models



# Deployment Models

## Public Cloud



App Engi



Amazon  
EC2



IBM Blue Cloud

- Public Cloud is the name of the information service used for platforms that transfer data to all individuals or organizations with internet access.
- Public Clouds are owned and operated by **cloud service providers**.
- Amazon EC2, Google AppEngine, Windows Azure Services Platform, IBM Blue Cloud

# Deployment Models

## Private Cloud

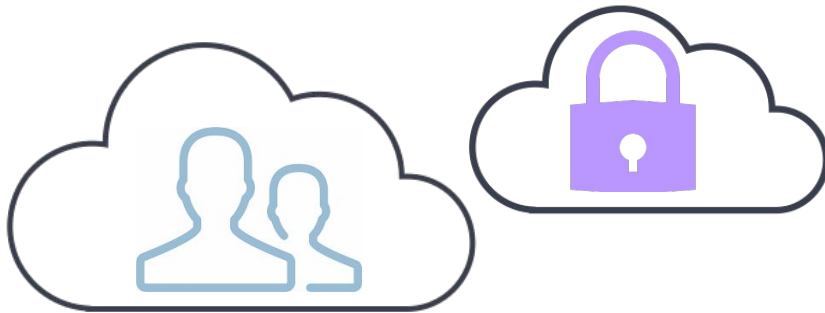


- It means using or creating a cloud infrastructure that is dedicated to only a specific customer/organization.
- The key differences between private and public clouds;
  - Not publicly accessible
  - Private Clouds are owned and operated by your IT team.



# Deployment Models

## Hybrid clouds



- Hybrid clouds use both private and public clouds, depending on their purpose.
- Hybrid clouds are Integrated environments of public and private infrastructure.
- For example, You can use a **Public Cloud** to interact with customers while retaining secure data via a **Private Cloud**.

# Deployment Models

## Community Cloud



- Community clouds are shared platforms, usually with shared data and data management considerations, between organizations.
- If **multiple/sister companies** share use of cloud technology, it is called Community Cloud
- A community cloud, for example, may belong to a single government and can be used by different departments of that government.



# THANKS!

## Any questions?

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